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Jia-Bin Huang

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EXAMINER

SINKANTARAKORN, PAWARIS

ART UNIT

PAPER NUMBER

2416

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/709,594	<b>Applicant(s)</b> HUANG, JIA-BIN	
	<b>Examiner</b> PAO SINKANTARAKORN	<b>Art Unit</b> 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, filed 12/29/2008, with respect to the rejection(s) of claim(s) 1, 11, and 18 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of different interpretation of previously applied references.
2. Claims 1-20 are currently pending in the application.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 4-5, 7-9, 11, 12, 14-17, and 20 are rejected under 35 U.S.C. 102(a) as being anticipated by Admitted Prior Art (APA).

**Regarding claims 1 and 11**, Admitted Prior Art (APA) discloses an apparatus for improving the management of received data packets of a host system that comprises a plurality of data buffers and a plurality of descriptors that corresponds to a subset of the plurality of data buffers to manage the received data packets, the apparatus comprising:

a receiver for receiving a data packet (see paragraph 4 lines 1-2, a Network Interface Card (NIC) receives data packets from a network);

a first storage unit for storing the data packet from the receiver (see paragraph 4 lines 4-5, transferring the data packet into a data buffer);

a counter for counting a number of descriptors in a first state to produce a count value (see paragraph 8 , counting the number of times an event occurs, where the number of times is the number of descriptors in the unavailable state);

a second storage unit for storing a threshold value (see paragraph 8 lines 2-4, a certain value corresponds to a threshold value, where it is inherent that the certain value is stored in order for the NIC to know that the counted value has reached the certain value); and

a comparator for comparing the count value with the threshold value and producing a comparison signal (see paragraph 6 lines 1-14 and paragraph 8 lines 2-4, comparing the number of times an event occurs to a certain value and it is inherent that the comparator produces a comparison to the NIC when the number reaches the certain value (threshold value) in order for the NIC to send a signal to the host system);

wherein the apparatus issues a first event to the host system according to the comparison signal (see paragraph 8 lines 2-4, sending a signal to the host system based on the comparison signal) to prevent all the descriptors from being in the first state (see paragraph 6, issuing a signal to the host system to clear the data buffer renews the buffer length of the descriptor);

**regarding claim 4**, the first event indicates that data buffers corresponding to the descriptors should be cleared (see paragraph 6);

**regarding claims 5, 7, 12, and 14**, the first state is an unavailable/free state (see paragraph 5, free descriptors and unavailable descriptors);

**regarding claims 8 and 15**, the apparatus issues a second event when the data packet is an ok packet (see paragraph 6);

**regarding claims 9 and 16**, the data buffers corresponding to the descriptors are cleared when the first event or the second event is issued (see paragraph 6);

**regarding claim 17**, the amount of the descriptors in the first state is monitored when a plurality of error data packets are continuously received (see paragraphs 7 and 8, );

**regarding claim 20**, the counter monitors the number of the descriptors in the first state to produce the count value when the apparatus continuously receives a plurality of error data packets (see paragraphs 7 and 8).

### ***Claim Rejections - 35 USC § 103***

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 3, 6, 10, 13, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (APA) in view of Hayter et al. (US 7,320,022).

**Regarding claim 18**, APA discloses a method for improving the management of data packets received from a network by a host system that comprises a plurality of data buffers and that utilizes a plurality of descriptors that corresponds to a subset of the plurality of data buffers to manage the data packets received from the network, the method comprising:

receiving a data packet from the network (see paragraph 4 lines 1-2, a Network Interface Card (NIC) receives data packets from a network);

transferring the data packet into at least one of the data buffers (see paragraph 4 lines 4-5, transferring the data packet into a data buffer);

counting a number of times an event occurs (see paragraph 8, counting the number of times an event occurs)

calculating a count value according to the number of times an event occurs (see paragraph 8, counting the number of times an event occurs); and

comparing the count value with a threshold value, and triggering a first event to the host system when the count value reaches the threshold value (see paragraph 6 lines 1-14 and paragraph 8 lines 2-4, notifying via a signal when the number of times an event occurs has reached a certain value);

wherein the first event notifies the host system to clear the data buffers corresponding to the descriptors (see paragraph 6, issuing a signal to the host system to clear the data buffer).

APA does not explicitly disclose that the event is of descriptors having their state changed when the data packet is transferred. However, Hayter et al., from the same or similar fields of endeavor, disclose a counter for counting a number of descriptors that will have their state changed when the data packet is transferred (see column 14 lines 34-36 and column 16 lines 45-52, decrementing the current descriptor count, where the current descriptor count indicates the number of descriptors currently available, where currently available is broadly interpreted as a first state).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement a counter for counting a number of descriptors that will have their state changed when the data packet is transferred as taught by Hayter et al. into the apparatus of APA in order to limit the NIC from using descriptors outside of

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the descriptors between the current descriptor and the descriptor indicated by the current descriptor count (see column 14 lines 37-39).

**Regarding claim 2**, APA fails to disclose an apparatus further comprising a Receive Direct Memory Address (DMA) for transferring the data packet from the first storage unit into the data buffers. However, Hayter et al., from the same or similar fields of endeavor, discloses the apparatus further comprising a Receive Direct Memory Address (DMA) for transferring the data packet from the first storage unit into the data buffers (see paragraph 4 of APA and Figure 1 packet interface circuit 22A and corresponding description of Hayter et al.).

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to implement the apparatus further comprising a Receive Direct Memory Address (DMA) for transferring the data packet from the first storage unit into the data buffers as taught by Hayter et al. into the apparatus of APA in order to allow certain hardware subsystems within the computer to access system memory for reading and/or writing independently of the central processing unit (DMA is generally known in the art).

**Regarding claim 3**, the counter, the second storage unit, and the comparator are positioned within the Receive DMA module (see Hayter et al. Figure 1 DMA controller and corresponding description).

**Regarding claims 6, 10, 13, and 17**, APA in view of Hayter et al. do not disclose the threshold value is programmable or the apparatus is a wireless network device.



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However, programmable threshold value and wireless NIC are well known in the art at the time of the invention.

Thus, it would have been obvious to implement programmable threshold value and wireless NIC into the apparatus of APA in view of Hayter et al. in order to increase the flexibility of the apparatus.

### ***Allowable Subject Matter***

9. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

10. **Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure

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relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAO SINKANTARAKORN whose telephone number is (571)270-1424. The examiner can normally be reached on Monday-Thursday 9:00am-3:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/  
Supervisory Patent Examiner, Art  
Unit 2416

/P. S./

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